MISSOURI EMERGENCY PACKET NETWORK (MEPN)
PROJECT PLAN

PROJECT SCOPE – Develop and deploy a 6 meter Amateur Radio Packet network backbone, with 2 meter input, to provide reliable emergency communications throughout the state of Missouri. Each node in the backbone will be capable of connecting to the State Emergency Management Agency (SEMA) in Jefferson City. In addition, each node will be capable of communicating with all adjacent nodes. While the 6 meter backbone concept may be new to Missouri, many states, including neighboring Arkansas, have successfully implemented such a system.

Discussion: Attempts to use 2 meters to provide reliable communications from any point in the state to Jefferson City have met with limited success. The primary failure mode is the inability of two meters to reach Jeff City directly. One or more digital repeaters are needed and these nodes come and go frequently. As a result, a path that works today may not be valid tomorrow and the information does not reach the intended recipient.

OBJECTIVE – The objective of this project is to use the minimum number of nodes, consistent with readily available equipment and support structures, to link all parts of the state to the State Emergency Management Agency (SEMA) in Jefferson City. At least one node will be placed in each highway patrol troop coverage area. This will provide backup communications for many served agencies; Amateur, public and volunteer. Clients will include, ARES, RACES, Red Cross, SEMA and county and local governments, to name a few. When proven reliable, the MEPN is expected to be written into many backup and Homeland Security plans.

TIMING – There are nine highway patrol troops in Missouri. Phase I will connect the two major cities, Kansas City and St. Louis with SEMA headquarters in Jeff City. Phase II will connect the next tier of population centers, such as Columbia, Springfield, Cape Girardeau to Jeff City. The final system build out will be included in Phase III.

MARKETING – The MEPN will be marketed to the various served agencies, the highway patrol, to state and local governments as well as to the Amateur service groups such as ARES and RACES. Only by knowing the scope and purpose, will individuals and organizations be able to provide input to the project's success.

SPONSORS – Node sponsors will be solicited in each highway patrol troop area. Clubs, groups or individuals who are not likely to disband or move will more easily meet the acceptance criteria. At a minimum, the acceptance criteria will consider the volunteer's past track record in building and supporting systems that operate 24/7. Additional criteria will be funding, site availability, on-going maintenance and their relationship with served agencies in or near their location. Additional sponsors may be solicited to develop 2 meter nodes at served agency sites and in areas not directly reachable from the any backbone site.

COORDINATION – Packet systems in Missouri are currently not coordinated. For long term success and system integrity, the MEPN will be a coordinated system. At a minimum, coordination will include:

1. Site selection
2. Node naming
3. Frequency assignment
4. TNC configuration

ASSISTANCE – The project will provide assistance to node sponsors as needed. For example, assistance may be needed in calculating path losses, obtaining site permissions, purchasing and modifying equipment and node configuration. A "how to" resource package is planned.

NODE CONFIGURATION – An overall project plan usually does not contain detailed technical information. However, much work has already been done in recent years that has not been implemented. To provide potential sponsors with an idea of the backbone node requirements, this one paragraph of technical information is included in the project plan.

At a minimum, each backbone node should have:

1. An ERP of 200 watts or more on 6 meters
2. Low loss, non degrading feedline
3. Backup power
4. A direct path to each adjacent node
5. Co-located with a 2 meter packet node for local input